REMARKS

Claims 1, 4-16, 18-24 and 26-30 remain pending in the application.

Claims 1, 4, 5 and 11-13 over Koslov in view of Fujinami

In the Office Action, claims 1, 4, 5 and 11-13 were rejected under 35 USC 103(a) as allegedly being obvious over U.S. Pat. No. 6,668,028 to Koslov et al. ("Koslov") in view of U.S. Pat. No. 5,974,152 to Fujinami ("Fujinami"). The Applicants respectfully traverse the rejection.

Claims 1, 4, 5 and 11-13 recite a digital adaptive equalizer that at least one of corrects for and equalizes impairments caused in a high speed transmission signal.

Koslov appears to disclose a resampling circuit utilizes an all-pass IIR filter with an adjustable coefficient to effect variable delays (Koslov, col. 2, lines 41-44). The variable delay IIR filter may be implemented in two stages, e.g., the first stage comprising multiple fixed delay IIR filters, and a second stage comprising an IIR filter with a finely adjustable variable delay structure (Koslov, col. 2, lines 44-52). The utilized all pass filters have a single transfer function with a coefficient that is varied to effect variable delays (Kosclov, col. 2, lines 41-52; col. 4, line 43-49). The resampling circuit is used in a wide range of applications where signal resampling, e.g., interpolation, needs to be performed to produce a signal having the same or lower sample rate than the original signal being processed (Koslov, col. 9, lines 55-59).

Koslov's circuit is used to resample a signal, i.e., produce a signal having the same or lower sample rate than an original signal. Koslov fails to disclose or suggest a digital adaptive equalizer that at least one of corrects for and equalizes impairments caused in a high speed transmission signal, as recited by claims 1, 4, 5 and 11-13.

The Office Action relies on Fujinami to allegedly make up for the deficiencies in Koslov to arrive at the claimed invention. The Applicants respectfully disagree.

Fujinami appears to disclose a sound image localization control device that reproduces an acoustic signal on a basis of a plurality of simulated

delay times and a plurality of simulated filtering characteristics (Abstract). A plurality of infinite response filter outputs are summed and input to a finite impulse response filter (Fujinami, Fig. 7).

Fujinami discloses a sound image localization control device. A sound image localization control device, as disclosed by Fujinami, is within a completely unrelated art than a resampling circuit, as disclosed by Koslov. There is no suggestion to modify a resampling circuit with components from a sound image localization control device to arrive at the recited claims. "Teachings of references can be combined only if there is some suggestion or incentive to do so." In re Fine, 5 USPQ2d 1596,1600 (Fed. Cir. 1988) (quoting ACS Hosp. Sys. v. Montefiore Hosp., 221 USPQ 929, 933 (Fed. Cir. 1984)) (emphasis in original).

Moreover, even if the theoretical combination of Koslov and Fujinami were obvious (which it is not), the theoretical combination would result in a modified resampling circuit reproducing an acoustic signal, i.e., a **nonsensical device**.

Neither Koslov nor Fujinami, either alone or in combination, disclose, teach or suggest a digital adaptive equalizer that at least one of corrects for and equalizes impairments caused in a high speed transmission signal, as recited by claims 1, 4, 5 and 11-13.

A benefit of a digital adaptive equalizer that at least one of corrects for and equalizes impairments caused in a high speed transmission signal is, e.g., to correct for signal degradation upon transmission. The claimed digital adaptive equalizer can be used for a T1/E1 long haul transceiver (i.e., the receiver portion) which is capable of adapting to a wide range of cable types, cable lengths, and/or other data transmission impairments. Koslov's disclosure of a resampling circuit used for resampling and Fujinami sound image localization control device that reproduces an acoustic signal **fails to suggest** the benefits of a digital adaptive equalizer that at least one of corrects for and equalizes impairments caused in a high speed transmission signal, as recited by claims 1, 4, 5 and 11-13.

For at least all the above reasons, claims 1, 4, 5 and 11-13 are patentable over the prior art of record. It is therefore respectfully requested that

the rejection be withdrawn.

Claims 6-10 over Koslov in view of Fujinami and Boyd

Claims 6-10 were rejected under 35 USC 103(a) as allegedly being obvious over Koslov in view of Fujinami, and further in view of U.S. Pat. No. 6,438,162 to Boyd et al. ("Boyd"). The Applicants respectfully traverse the rejections.

Claims 6-10 are dependent on claim 1, and are allowable for at least the same reasons as claim 1.

Claims 6-10 recite a digital adaptive equalizer that at least one of corrects for and equalizes impairments caused in a high speed transmission signal, the digital adaptive equalizer comprising a **programmable infinite impulse response filter**, a filter selector to select from a plurality of filter transfer functions for the programmable infinite impulse response filter, and a finite impulse response filter.

As discussed above, neither Koslov nor Fujinami, either alone or in combination, disclose, teach or suggest a digital adaptive equalizer that at least one of corrects for and equalizes impairments caused in a high speed transmission signal, as recited by claims 6-10.

The Office Action relies on Boyd to allegedly make up for the deficiencies in Koslov in view of Boyd to arrive at the claimed invention. The Applicants respectfully disagree.

Boyd appears to disclose a method and apparatus for restoring digital pulses within a data transmission system which have degraded due to the attenuation and distortion inherent in a data medium (Abstract; col. 3, lines 50-60).

Although Boyd discloses an apparatus that performs a similar function as Applicants' recited claims, Boyd fails to disclose or suggest the claimed apparatus to perform the function, i.e., a digital adaptive equalizer comprising a **programmable infinite impulse response filter**, a filter selector to select from a plurality of filter transfer functions for the programmable infinite impulse response filter, and a finite impulse response filter, as recited by claims

6-10.

Neither Koslov, Fujinami nor Boyd, either alone or in combination, disclose, teach or suggest a digital adaptive equalizer that at least one of corrects for and equalizes impairments caused in a high speed transmission signal, the digital adaptive equalizer comprising a **programmable infinite impulse response filter**, a filter selector to select from a plurality of filter transfer functions for the programmable infinite impulse response filter, and a finite impulse response filter, as recited by claims 6-10.

For at least all the above reasons, claims 6-10 are patentable over the prior art of record. It is therefore respectfully requested that the rejections be withdrawn.

Claims 14-16, 18-24 and 26-30 over Koslov in view of Fujinami and Simmons

Claims 14-16, 18-24 and 26-30 were rejected under 35 USC 103(a) as allegedly being obvious over Koslov in view of Fujinami, and further in view of U.S. Pat. No. 6,195,414 to Simmons et al. ("Simmons"). The Applicants respectfully traverse the rejections.

Claims 14-16, 18-24 and 26-30 recite at least one of correcting for and equalizing impairments caused in a received T1/E1 data signal by firstly filtering a received T1/E1 data signal using a infinite impulse response digital filter and adaptively adjusting an output of the infinite impulse response digital filter to accurately match an inverse response of a transmission channel used to transmit said received T1/E1 data signal.

The Examiner acknowledges that Koslov in view of Fujinami fails to disclose filtering a received T1/E1 data signal. However, the Examiner relies on Simmons to make up for the deficiencies in Koslov in view of Fujinami to arrive at the claimed invention.

Simmons appears to disclose a system and method for accurately simulating a digital facility, including impairments, in a PSTN (Abstract). The facility being simulated includes a digital network link, i.e., a T1, E1 or other digital link (Simmons, col. 5, lines 52-60). An infinite response filter is used to

remove images created during the immediately prior interpolation and also imparts appropriate band shaping required to match a frequency response characteristic of a desired CODEC receive filter (Simmons, col. 11, lines 51-56).

Although Simmons discloses use of an infinite response filter, the infinite response filter is used to remove images created during the immediately prior interpolation and also imparts appropriate band shaping required to match a frequency response characteristic of a desired CODEC receive filter. Simmons use of an infinite response filter for removing images and band shaping to match a CODEC does **NOT** suggest at least one of correcting for and equalizing impairments caused in a received T1/E1 data signal, much less by firstly filtering a received T1/E1 data signal using a infinite impulse response digital filter and adaptively adjusting an output of the infinite impulse response digital filter to accurately match an inverse response of a transmission channel used to transmit said received T1/E1 data signal, as recited by claims 14-16, 18-24 and 26-30.

Neither Koslov, Fujinami nor Simmons, either alone or in combination, disclose, teach or suggest at least one of correcting for and equalizing impairments caused in a received T1/E1 data signal by firstly filtering a received T1/E1 data signal using a infinite impulse response digital filter and adaptively adjusting an output of the infinite impulse response digital filter to accurately match an inverse response of a transmission channel used to transmit said received T1/E1 data signal, as recited by claims 14-16, 18-24 and 26-30.

Moreover, as the Examiner acknowledges, Koslov in view of Fujinami fails to disclose filtering a received T1/E1 data signal. Modifying Koslov in view of Fujinami to filter a received T1/E1 data signal when a received T1/E1 data signal would provide no functional purpose to Koslov's and Fujinami's systems is **nonsensical**. Koslov's system is directed toward sampling an analog signal for further digital processing. Fujinami's system is directed toward sound processing. A received T1/E1 data signal would serve **NO** purpose either Koslov's nor Fujinami's analog systems, making any combination of Koslov, Fujinami and Simmons **nonsensical**.

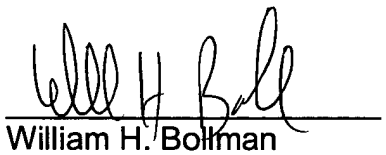
For at least all the above reasons, claims 14-16, 18-24 and 26-30 are patentable over the prior art of record. It is therefore respectfully requested

that the rejections be withdrawn.

Conclusion

All objections and rejections having been addressed, it is respectfully submitted that the subject application is in condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,



William H. Bollman
Reg. No. 36,457

Manelli Denison & Selter PLLC
2000 M Street, NW
Suite 700
Washington, DC 20036-3307
TEL. (202) 261-1020
FAX. (202) 887-0336

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